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AN INTERESTING DISJUNCT NEW GENUS OF PREPODESMINE MILLIPEDS FROM NIGERIA (POLYDESMIDA: CHELODESMIDAE)

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ABSTRACT

The new genus *Corystauchenus* is proposed for two Nigerian species (*beroni*, n. sp., and *samaru*, n. sp.) characterized by the occurrence of a median crest on the collum, enlarged subcoxal apophyses on the sterna of some posterior segments, a singular basoventral projection on the gonopod prefemur, and a modified solenomere. A possible relationship with the Nigerian genus *Afolabina* is suggested for further examination.

Museum collections around the world contain hundreds, if not thousands, of undescribed species of millipeds, most of them in families which have never been revised or even organized for the first time. Under such circumstances, no useful end is served by the opportunistic description of new species *per se*, unless there is some mitigating circumstance such as provision of a scientific name for an animal being studied in some other context. Another justification for proposing new names outside the framework of a revisionary study might be found in the case of unusual taxa reflecting some biogeographical anomaly or structural disjunction of systematic interest.

It is felt that two Nigerian species at hand fall under the latter provision in that both manifest structural characters previously unknown in the subfamily Prepodesminae. The modifications of collum and sterna were unknown within the family Chelodesmidae, while that affecting the gonopod prefemur occurs in only one Brazilian genus of the nominate subfamily and must be accounted a convergence independently derived in two distantly related amphiatlantic lineages. Either specialization alone would justify generic level recognition for the Nigerian millipeds. Other characters provide presumptive evidence of relationship with a known but previously unplaced genus, and even the slightest possibilities for synthesis are welcome in this group of arthropods.

Family Chelodesmidae Cook, 1895
(=Leptodesmidae auct.)

This amphiatlantic taxon seems likely to become the largest family group within the entire class Diplopoda. A number of short papers treating various groups considered of tribal

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status have appeared over the past three decades, but these have done little more than to imply the magnitude of the task that remains in elucidating chelodesmid diversity. The present recognition of two nominal subfamilies is surely an oversimplification, but must serve pending completion of many more tribal revisions.

Subfamily Prepodesminae Cook, 1896
(=Cordyloporinae auct.)

The most recent compilation (Hoffman, 1980) credits this taxon with 33 genera, all endemic to tropical Africa. Attems provided an overview of the group (as subfamily Cordyloporinae of the family Oxydesmidae) in 1938, and its classification was reorganized and greatly improved by Demange & Mauriès (1975), who accorded full family status as Cordyloporidae. My own investigations of prepodesmines suggest to me that subfamily rank within the Chelodesmidae more precisely reflects relationships. So far the two subfamilies are endemic to their respective continents, but it is entirely likely that a comprehensive review will distinguish at least tribes with geminate amphiatlantic genera. Affinity of the Neotropical group Trachelodesmini with the West African Xyodesmini has already been suggested (Hoffman & Reid, 1990).

Corystauchenus, new genus

Name: Gk. *korystos* (crested) + *auchen* (neck), in reference to the prominent median crest of the collum in this genus.

Type species: *C. beroni*, new species.

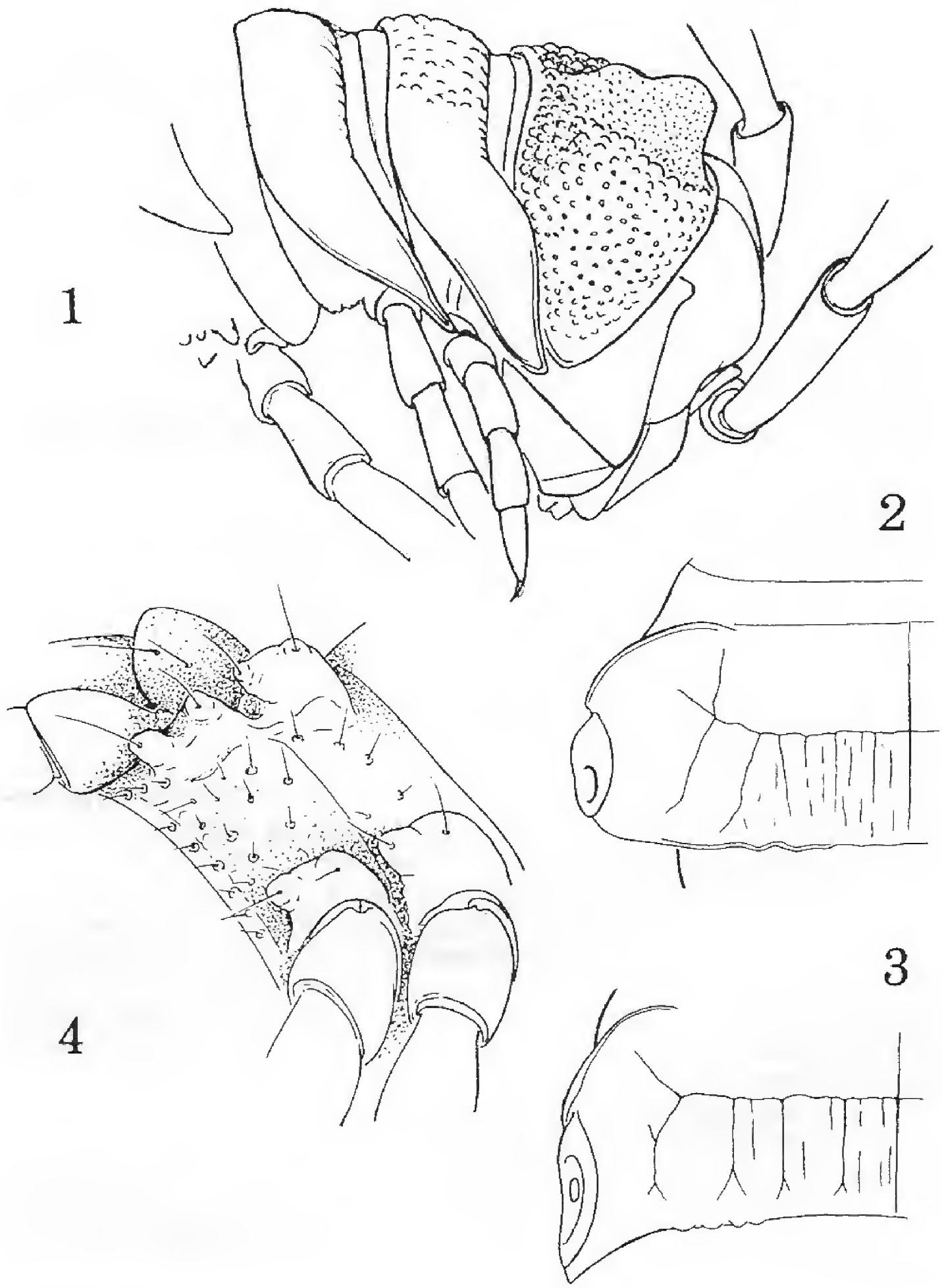
Diagnosis: Collum with prominent median crest. Paranota of segments 2 and 3 directed anteriad, their apices strongly attenuated and subspiniform. Peritremata discontinuous with anteriolateral rim of paranota. Sterna of posterior segments with prominent conical or bilobed apophyses at base of each coxa. Gonopods without median sternal element; coxae flattened dorsoventrally, without evident distal apophysis; prefemora with large projection, tipped with small specialized setae, on the ventrobasal surface, and long, slender, prefemoral process originating on lateral side; acropodite with three long slender processes, of femoral or tibial origin, in addition to a large, laminate, nearly transparent solenomere of a form unique in the family.

Remarks: Superficially, the gonotelopodite in this genus is most similar to that occurring in the likewise Nigerian genus *Afolabina* (Hoffman, 1967), here represented in Fig. 8 for comparison. The two species of *Afolabina* lack the accessory branch B of femoral process A, as well as femoral process C, and the solenomere is of a basic generalized form, but similarity is nonetheless evident. The characters of collum, anterior paranota, and sterna have no correspondence whatever in the two genera, suggesting that the apomorphic facies of these characters in *Corystauchenus* may result from some highly selective environmental factors as yet unimaginable. Of course, it is not to be excluded that intermediate species will be disclosed with further exploration of Nigeria.

Distribution: The two known members of this genus occur in northern and eastern Nigeria, presumably adapted to savannah biotopes.

Key to the species of *Corystauchenus*

Paranota of 4th segment nearly as slender and acute as those of 3rd; sternal apophyses of posterior segments elongated, each bilobed or bituberculate; body width 5.0 mm; process



Figs. 1-4. *Corystauchenus beroni*, n. sp. Fig. 1. Anterior end of body, dorsolateral aspect. Fig. 2. Left paranotum of segment 10, dorsal aspect. Fig. 3. Left paranotum of segment 15, dorsal aspect. Fig. 4. Sternum and leg bases of segment 15, oblique ventrolateral aspect, showing the unusual sternal apophyses.

A of acropodite nearly as long as prefemoral process and with spiniform process near base on mesal side; dorsal triangular lobe of process B located near process base; apex of process C shorter and ensiform, forming nearly a right angle . . . *C. beroni*, n. sp.

Paranota of 4th segment distinctly less acuminate than those preceding; sternal apophyses basically conical; body width 4.0 mm; process A relatively small, narrow and much shorter than prefemoral process, lacking spine at its base; triangular lobe of process B small and located beyond midlength of process; apex of process C longer and more evenly curved dorsad . . . . . *C. samaru*, n. sp.

Corystauchenus beroni, new species
Figures 1-5

Name: The species is named for its collector, Dr. Petar Beron (Bulgarian Natural History Museum), an avid student of arthropods world-wide.

Material: Male holotype (VMNH) from Jos (9°55′N, 8°53′E), Nigeria; P. Beron leg. July 1976.

Diagnosis: With the characters specified in the foregoing key.

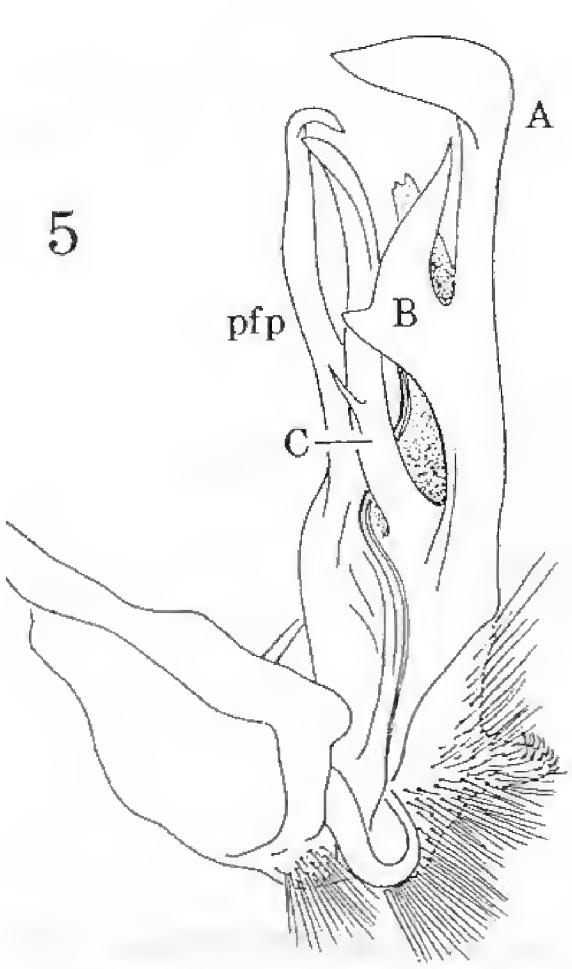
Holotype: Mature male, at present almost completely depigmented, coloration in life unknown. Length ca. 35 mm, W/L ratio at midbody ca. 14%; width of selected segments:

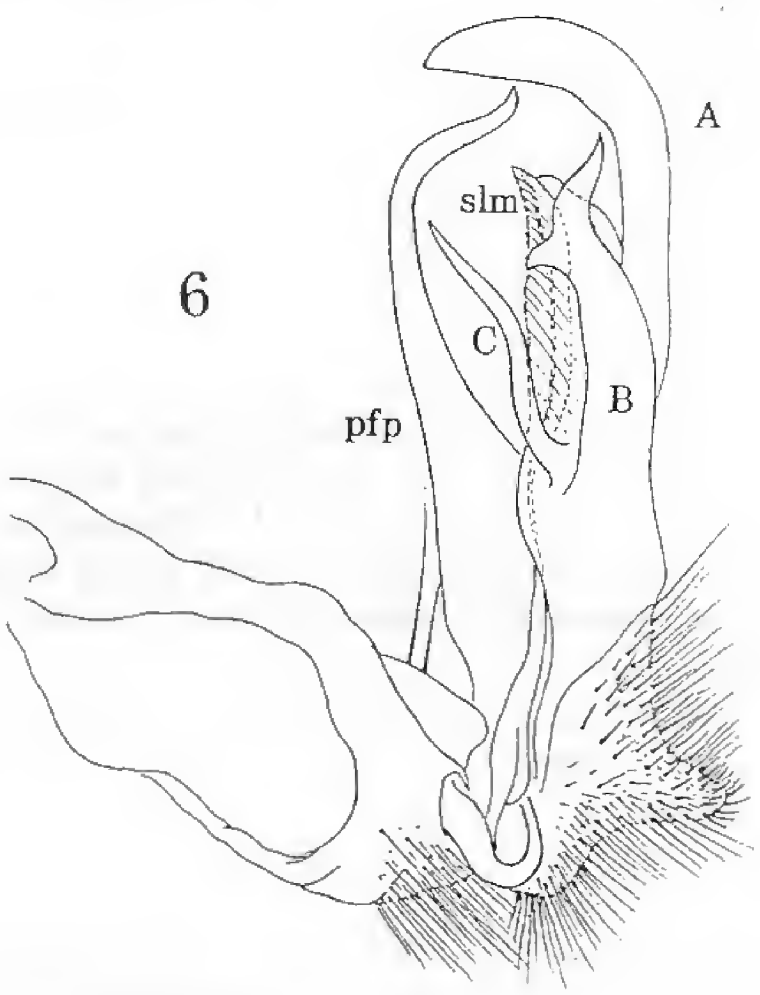
1 - 4.6 mm	8 - 5.0 mm
2 - 4.6	10 - 5.1
4 - 4.8	14 - 4.7
6 - 5.0	16 - 4.4

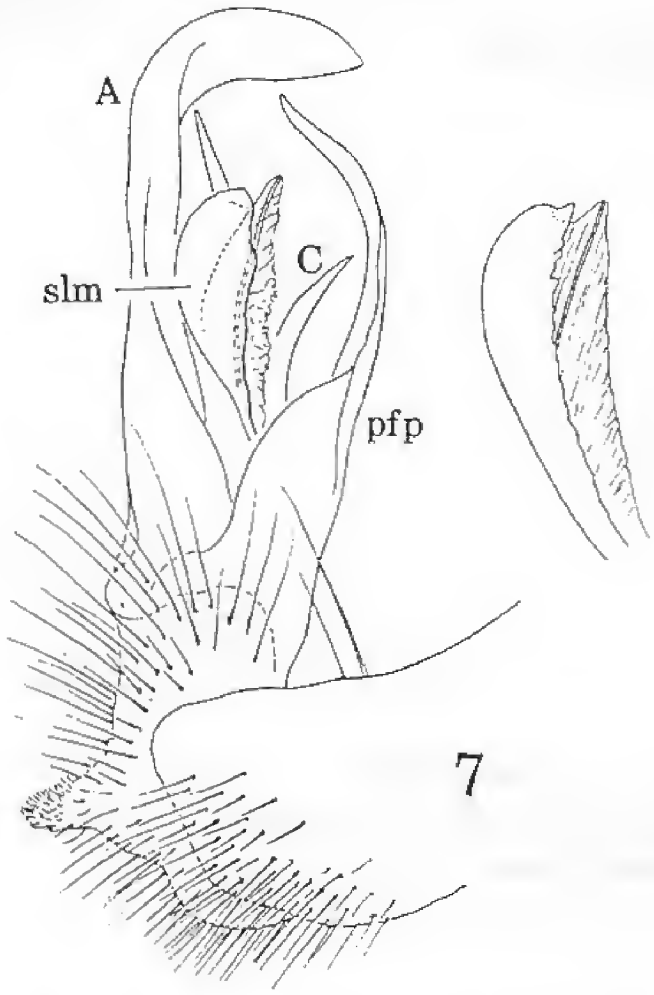
Head and antennae of typical prepodesmine form, the latter extending back to middle of 4th paranota; front of head smooth, with 2-2 epicranial setae, remainder of face invested with numerous short, widely dispersed setae; labrogenal offset very prominent; genae convex. Collum with large median crest (Fig. 1), highest near anterior end, surface of collum finely granulate, shape of lateral ends as illustrated. Paranota of segments 2-4 directed anteroventrad, elongated, strongly acuminate, those of segment 3 almost acicular (Fig. 1). Metaterga of segments 4-16 with distinct transverse primary sulcus, behind which divided into 4-4 to 5-5 elongate rectangular areas by longitudinal sulci; tergal surface moderately coriarious, that of paranota rather coarsely granulate. Paranota nearly horizontal, of moderate size, anterior corners of 5th-19th broadly rounded (Fig. 2), with fine rim, posterior corners rounded back to about midbody segments, posteriad to which increasingly produced (Fig. 3); peritremata prominent, not continuous with paranotal margin. Posterior segments of typical prepodesmine form, subapical tubercles of epiproct somewhat larger than normal.

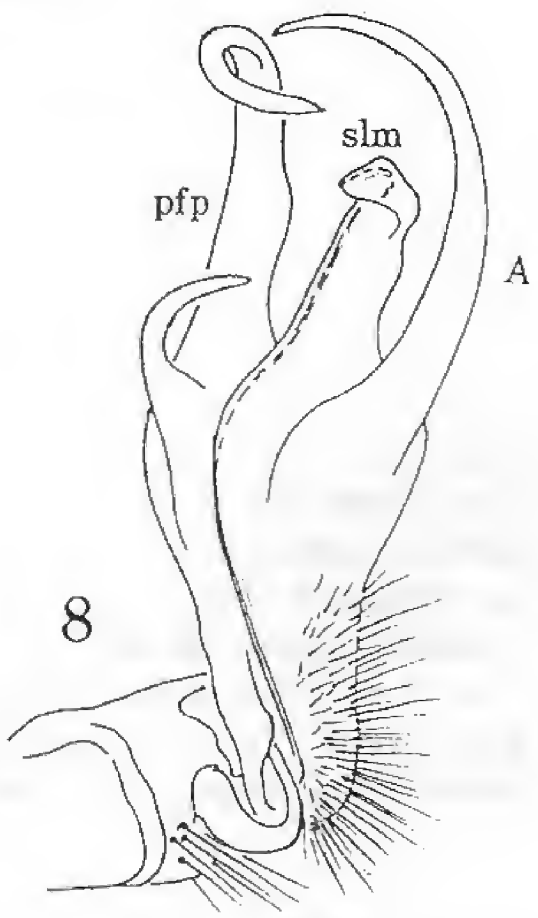
Sides of body smooth, posterior segments with a single row of small acute tubercles along posterior edge just above insertion of legs. Sterna broad, flat, nearly glabrous, scattered setae originating from hemispherical tubercles, a single row of four to six similar but much larger tubercles along midventral posterior edge; each coxa subtended by a prominent, bituberculate ridge (Fig. 4), except on segment 19. Anterior legs and sterna unmodified, sternum of 6th segment nearly as wide as 8th.

Gonopod aperture transversely oval, small, not displacing stricture, lateral ends and posterior edge slightly elevated. No median sternal element between gonocoxae. Gonopods as described under generic diagnosis and shown in Fig. 5; prefemoral region (setose) shorter than broad, with prominent ventrobasal projection distally beset with small specialized setae; a large prefemoral process originates on lateral side and extends straight distad, its apex abruptly curved mesad; femoral region with three terminal branches: (1) one (A) straight









Figs. 5-8. Gonopods of *Corystauchenus* and *Afolabina* species. Fig. 5. Left gonopod of *C. beroni*, n. sp., mesal aspect, from holotype. Fig. 6. Left gonopod of *C. samaru*, n. sp., mesal aspect, from holotype. Fig. 7. Left gonopod of *C. samaru*, lateral aspect. Fig. 8. *Afolabina yoruba* Hoffman, left gonopod, mesal aspect. Abbreviations: A, B, C, distal "femoral" processes, pfp, prefemoral process, slm, solenomere.

except for abruptly bent distal fourth and with prominent bifurcate projection (B) near midlength; (2) a slender acicular process (C) originating near base of A on mesial side and extending to about level of tip of prefemoral process and (3) the modified solenomere (slm) in the form of a laminate branch with hyaline lamella bearing the prostatic groove standing on it at a right angle.

Corystauchenus samaru, new species
Figures 6, 7

Name: For the type locality, construed to be masculine in gender.

Material: Holotype male (VMNH) from Samaru (7° 38′E, 11° 9′N), near Zaria, Northeastern Province, Nigeria; J. C. Deeming leg. 19 July 1971.

Diagnosis: With the characters of the genus, distinguished from *C. beroni* by the characters stated in the foregoing key to species and by genitalic differences shown in Figs. 6 and 7.

Holotype: Adult male in damaged condition, length indeterminate (posterior segments missing), maximum width 3.9 mm. Completely discolored by preservation. Generally similar to *C. beroni*, differing in the several respects stated in the foregoing key and diagnosis. Sternal processes begin on segment 11, full size on 12 where each is acutely conical instead of elongated and bilobed. Gonopod structure (Figs. 6 and 7) similar to that of *beroni* in general appearance, differing in the shape of process B and much smaller process C which lacks the small basal spine present in *beroni*.

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